



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,553	08/22/2001	Hyun-Woo Lee	678-718 (P9880)	1507
28249	7590	09/06/2005	EXAMINER	
DILWORTH & BARRESE, LLP 333 EARLE OVINGTON BLVD. UNIONDALE, NY 11553			CHANG, EDITH M	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 09/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/935,553

Applicant(s)

LEE ET AL.

Examiner

Edith M. Chang

Art Unit

2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2005.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-22, 25-29 and 32-34 is/are rejected.
7) ☒ Claim(s) 23, 24, 30 and 31 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 22 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 20050511, 20020322.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is a correction of the Notice of Non-Responsive Amendment of the previous Office Action. The objections and rejections of the pending claims 1-34 are listed in the following.

Claim Objections

2. Claims 4-19 and 23-33 are objected to because of the following informalities:

Claims 4, 9, 11, 14 & 18 line 1: "UTRAN" should be "UTRAN (UMTS (Universal Mobile Telecommunication System) Terrestrial Radio Access Network), since it appears first time in the independent claim.

Claims 23, 25, 27, 30 & 32, line 1: "UE" should be "UE (User Equipment)", since it appears first time in the independent claim.

Claim 5-8, 10, 12-13, 15-17, 19, 24, 26, 28-29, 31 and 33 are dependent on the objected claims 4, 9, 11, 14, 18, 13, 25, 27, 30 and 32.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Claims 25-26 and 32-33 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in

Art Unit: 2637

the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 25 & 32, a user equipment (UE) receiver with its method, the UE receiver comprising a plurality of despreader for generating a first despread signal and a second despread signal despread using a first orthogonal code and a first symbol pattern; a third despread signal and a fourth despread signal despread using the first orthogonal code and a second symbol pattern. The drawings do not disclose a plurality of despreader for generating a first, a second, a third, and a fourth despread signal using the same orthogonal code (the first orthogonal code).

Claim 26 and 33 are dependent on the rejected claims 25 and 32.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-8, 11-22 and 27-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, lines 5-6, lines 7-8, lines 11-12, line 15, lines 16-17 and lines 20-21: the limitation "after transmission power control" does not clearly indicate after what "transmission power control".

Claim 3, lines 1-2: "the symbol pattern" lacks antecedent basis.

Claim 4, line 8: "the second symbol pattern" lacks antecedent basis.

Art Unit: 2637

Claim 8 & Claim 13, lines 1-2: "the symbol pattern" in "the symbol pattern is one of" lacks antecedent basis.

Claim 11, lines 10-11, line 16 & lines 19-20 (three instances): "the added signal" does not clearly indicated which added signal it is, since there are more than one added signals can be referred to.

Claim 12, line 2: "the symbol pattern" lacks antecedent basis; lines 3-4: "the same cell radius" lacks antecedent basis.

Claim 14, line 9, line 13, line 16, line 20, lines 23-24, line 27 & lines 30-31 (seven instances): "the added signal" does not clearly indicated which added signal it is, since there are more than one added signals can be referred to.

Claim 18, lines 5-6, line 8 & line 10 (three instances): "the spread signal" does not clearly indicated which spread signal it is, since there are more than one spread signals can be referred to.

Claim 20, line 16: "a reception power-controlled signal of the third despread signal" does clearly indicate whether it is another reception power-controlled signal of the third despread signal other than the "a reception power-controlled signal of the third despread signal" recited in lines 12-13 of this claim;

line 17: "a reception power-controlled signal of the first despread signal" does clearly indicate whether it is another reception power-controlled signal of the first despread signal other than the "a reception power-controlled signal of the first despread signal" recited in line 12 of this claim;

lines 18-19: "a reception power-controlled signal of the fourth despread signal" does clearly indicate whether it is another reception power-controlled signal of the fourth despread signal other than the "a reception power-controlled signal of the fourth despread signal" recited in line 15 of this claim;

lines 19-20: "a reception power-controlled signal of the second despread signal" does clearly indicate whether it is another reception power-controlled signal of the second despread signal other than the "a reception power-controlled signal of the second despread signal" recited in line 14 of this claim.

Claim 22, lines 1-2: "the reception power control" lacks antecedent basis.

Claim 27, lines 16-17: "a reception power-controlled signal of the third despread signal" does clearly indicate whether it is another reception power-controlled signal of the third despread signal other than the "a reception power-controlled signal of the third despread signal" recited in line 13 of this claim;

lines 17-18: "a reception power-controlled signal of the first despread signal" does clearly indicate whether it is another reception power-controlled signal of the first despread signal other than the "a reception power-controlled signal of the first despread signal" recited in lines 11-12 of this claim;

line 19: "a reception power-controlled signal of the fourth despread signal" does clearly indicate whether it is another reception power-controlled signal of the fourth despread signal other than the "a reception power-controlled signal of the fourth despread signal" recited in lines 15-16 of this claim;

line 20: "a reception power-controlled signal of the second despread signal" does clearly indicate whether it is another reception power-controlled signal of the second despread signal other than the "a reception power-controlled signal of the second despread signal" recited in lines 14-15 of this claim.

Claim 28, lines 1-2: "the symbol pattern" lacks antecedent basis.

Claim 29, lines 1-2: "the reception power control" lacks antecedent basis.

Claim 2, 5-7, 15-17, 19 and 21 are dependent on the rejected claims 1, 4, 14, 18 and 20.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

7. Claim 34 is rejected under 35 U.S.C. 102(e) as being anticipated by Kuchi et al. (US 6,542,556 B1).

Regarding claim 34, in FIG.4, Kuchi et al. discloses a transmit diversity transmitter with at least four antennas (414, 416, 418 & 420) comprising the space time spreading blocks (406 & 408) and the filter and modulate (411 & 412) as the means for transmitting the signals including the pilot signals, wherein the transmit diversity in the wireless communication systems inherently provides the characteristic of the

Art Unit: 2637

transmitted pilot signals are effectively transmitted less than the at least four antennas due to fading (column 1, lines 28-31).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 9-10 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuchi et al. (US 6,542,556 B1) in view of Whinnett et al. (US 6,317,411 B1).

Regarding **claims 9 & 18**, in FIG.1, Kuchi et al. discloses a transmitter having four antennas 114, 116, 118 and 120, the transmitter comprises spread, filter and modulate blocks connected to four antennas to transmit the spreaded S1 and spreaded S2 with the same spread code from the transform block 106 (as the *first symbol pattern*) transmitted on antenna 114 and antenna 116 respectively (column 4 lines 20-22), the same as spreaded Sd₁ and spreaded Sd₂ transmitted from the transform block 108 (as the *second symbol pattern*) on antenna 118 and antenna 118 respectively . However, Kuchi et al. does not explicitly specify the multiplier used for spreading the symbols. Whinnett et al. teaches the multiplier 92 used to spread symbols in FIG.9, wherein spreaders 92 to spread a first symbol patterns S₁S₁S₂S₂ and spreaders 94 to spread a second symbol patterns S₃S₃S₄S₄, and each multiplier connected to one of the four

Art Unit: 2637

antennas A₁ to A₄ (column 8, lines 20-23). As both Kuchi et al.'s and Whinnett et al.'s transmitter provides spreaders to spread two symbol patterns for transmitting over four antennas respectively, at the time of the invention was made, it would have been obvious to one of ordinary skill in the art to have the multipliers taught by Whinnett et al. in the Kuchi et al.'s spread, filter and modulate blocks, since spreading the symbols using the multiplier is well known in the wireless CDMA technique, and for the purpose of providing antenna data stream (column 10 lines 8-9 '411) ready for transmitting in a space-time transmit diversity.

Regarding **claims 10 & 19**, Kuchi et al. disclose the symbol pattern is a data symbol pattern (column 3 line 66-column 4 line 5).

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 1, 3, 11, 13, 20, 21 27 and 28 are rejected under the judicially created doctrine of double patenting over claims 1, 3, 7, 8, 17, 18, 19 and 20 of U. S. Patent No.

Art Unit: 2637

6,690,712 B2 respectively since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows:

Claim 1, the Claim 1 of the instance application and the claim 1 of US Pat. 6,690,712 B2 are drawn to identical subject matter, except the phrase "after transmission power control". In the UTRAN, the spreading/dispersing is performed after the previous transmission power control and before the next transmission control, hence, they claim the same invention.

Claim 3, the dependent claim 3 of the instance application is "wherein *the symbol pattern* is one of a pilot symbol pattern and a data symbol pattern", and the dependent claim 3 of US Pat. 6,690,712 B2 is "wherein *the symbol patterns* are one of pilot symbol patterns and data symbol patterns". Whether it is the symbol pattern or the symbol patterns, the independent claim 1 of the instance application and the independent claim 1 of the U.S. Pat. 6,690,712 B2 comprise both symbol pattern and symbol patterns, therefor, the Claim 3 of the instance application and the claim 3 of US Pat. 6,690,712 B2 are drawn to same subject matter.

Claim 11, the Claim 11 of the instance application is the method claims of the apparatus claim 1, and the claim 7 of US Pat. 6,690,712 B2 is the method claim of the apparatus claim 1 ('712) are drawn to the same subject matter, hence, they claim the same invention.

Claim 13, the dependent claim 13 of the instance application is "wherein *the symbol pattern* is one of a pilot symbol pattern and a data symbol pattern", and the dependent claim 8 of US Pat. 6,690,712 B2 is "wherein *the symbol patterns* are one of pilot symbol patterns and data symbol patterns". Whether it is the symbol pattern or the symbol patterns, the independent claim 11 of the instance application and the independent claim 7 of the U.S. Pat. 6,690,712 B2 comprise both symbol pattern and symbol patterns, therefor, the Claim 13 of the instance application and the claim 8 of US Pat. 6,690,712 B2 are drawn to same subject matter.

Claim 20, the claim 20 is discloses in the FIG.6 and inherently receiving transmitted signals descried in the preamble of the claim 19 and disclosed in the FIG.4 of US Pat. ('712), the receiving transmitted signals are provided by the four antennas disclosed in FIG.3 of the instance application (the specification, page 19 lines 7-8). The reception power-controlled signal of the despread signal used in the adders of the instance application is the same as the despread signal used in the claim 17 of the paten ('712), since the reception power-controlled signal can be the despread signal or a part of the despread signal in generating estimating channel signals. Therefore, these two inventions are drawn to same subject matter.

Claim 21, the dependent claim 21 of the instance application is "wherein *the symbol pattern* is one of a pilot symbol pattern and a data symbol pattern", and the dependent claim 18 of US Pat. 6,690,712 B2 is "wherein *the symbol patterns* are one of pilot symbol patterns and data symbol patterns". Whether it is the symbol pattern or the symbol patterns, the independent claim 21 of the instance application and the

independent claim 17 of the U.S. Pat. 6,690,712 B2 comprise both symbol pattern and symbol patterns, therefor, the Claim 21 of the instance application and the claim 18 of US Pat. 6,690,712 B2 are drawn to same subject matter.

Claim 27, the claim 27 is the method claim of the apparatus claim 20 discloses in the FIG.6 of the instance application. Before despreading the received signals, the received signals have been received in the user equipment (UE), hence the claim 27 of the instance application inherently comprises the step of receiving transmitted signals as recited in the claim 19 of US Pat. 6,690,712 B2 (column 18, lines 41-63) in order to perform the despreading step. The despreading step is the generating step of the patent ('712); and the estimating step of using the reception power-controlled signal of the despread signal of the instance application is the same as using despread signal recited in the patent ('712), since the reception power-controlled signal can be the despread signal or a part of the despread signal in estimating channel signals.

The transmitter that transmits the signals to the receiver of FIG.6 is disclosed in FIG.3 of the instance application (the specification, page 19 lines 7-8) as recited in the claim 19 of the patent (column 18, lines 41-63). The claim 27 is disclosed in the FIG.6 of the instance application, and the claim 19 of the patent is disclosed in the FIG.4 of the patent. These two figures are the same with same elements and structures. Therefore, these two inventions are drawn to same subject matter.

Claim 28, the dependent claim 28 of the instance application is "wherein *the symbol pattern* is one of a pilot symbol pattern and a data symbol pattern", and the dependent claim 20 of US Pat. 6,690,712 B2 is "wherein *the symbol patterns* are one of

Art Unit: 2637

pilot symbol patterns and data symbol patterns". Whether it is the symbol pattern or the symbol patterns, the independent claim 27 of the instance application and the independent claim 19 of the U.S. Pat. 6,690,712 B2 comprise both symbol pattern and symbol patterns, therefor, the Claim 28 of the instance application and the claim 20 of US Pat. 6,690,712 B2 are drawn to same subject matter.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Allowable Subject Matter

12. Claims 4-8, 14-17 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action, and overcome the objection(s), set forth in this Office action.

13. Claims 23-24 and 30-31 would be allowable if rewritten to overcome the objection(s), set forth in this Office action.

14. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to teach or suggest, alone or in a combination, among other things, at least a UTRAN transmitter having at least four antennas, as a whole, the combination of elements and features, which includes the eight adders connected to one to eight antennas respectively, the first adder adds a first and a second spread

Art Unit: 2637

signals, the second adder adds the first spreading signal and a third spread signal, the third adder adds a forth spread signal and a fifth spread signal, a fourth adder adds the fourth spread signal and a sixth spread signal, a fifth adder adds a seventh spread signal and a eighth spread signal, a sixth adder adds the seventh spread signal and a ninth spread signal, a seventh adder adds a tenth spread signal and a eleventh spread signal, and a eighth adder adds the tenth signal and a twelfth spread signal as recited in the claim.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M. Chang whose telephone number is 571-272-3041. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay K. Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

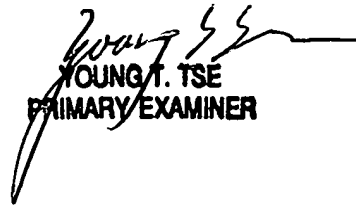
Application/Control Number: 09/935,553

Page 14

Art Unit: 2637

Edith Chang

September 2, 2005


YOUNG T. TSE
PRIMARY EXAMINER